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Suspected Bacterial Contamination of a Transfused Component - Blood Bank

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

This document provides guidance and procedures used to determine whether to send the blood component bag involved in a suspected transfusion reaction evaluation to the Microbiology Laboratory for a culture.

II. PRINCIPLE:

When a blood product from a patient experiencing a suspected transfusion reaction has been returned to the Blood Bank, then the patient's adverse reactions are compared to the *Guidelines for Suspecting Bacterial Contamination of a Transfused Component* to determine whether to send the product to the Microbiology Laboratory for a culture

III. DEFINITIONS:

A. **Designee**: any blood bank technical director, or transfusion medicine fellow.

IV. GUIDELINES FOR SUSPECTING BACTERIAL CONTAMINATION OF A TRANSFUSED COMPONENT:

A. Patient temperature 38°C or greater **and** at least 1°C over pre-transfusion temperature

B. Rigors (shaking chills)

C. Pulse of greater than 120 and/or blood pressure change of 30 mmHg (increase or decrease) systolic

V. POLICIES:

A. The reported adverse reactions from a suspected transfusion evaluations must be compared against the *Guidelines for Suspecting Bacterial Contamination of a Transfused Component* above to determine whether to send the product to the Microbiology Laboratory for a culture.

1. If the technologist has any doubts as to whether any of the patient's adverse reactions match any of the Guidelines, then the component bag should be sent for a culture. Examples in which the unit should be sent for a culture follow:

    a. The nurse marks "fever" under *Adverse Reaction Signs / Symptoms* on F-1566, *Record of Transfusion*.

    b. The pre-transfusion temperature was 37.0°C and the temperature rose to 37.9°C during the transfusion. Although the temperature is not 38°C or greater and at least 1°C over pre-transfusion temperature, the temperature did rise nearly 1°C and did nearly reach 38°C.

    Note: The *Record of Transfusion* lists a "Fever ≥ 38 °C **and** at least 1° C above pre-transfusion temperature" as an adverse reaction; in this case a reaction investigation should be initiated. In addition, to err on the side of caution, the Blood Bank should send the component for culture if the temperature is 38°C or greater **and/or** at least 1°C over pre-transfusion temperature.

B. **Variance Report**
A variance report should be submitted for all cases in which growth has been detected in a unit that was implicated in a transfusion reaction.

C. **Checking for Growth**
A day shift technologist (typically the Lead Medical Technologist or the technologist assigned to special procedures/antibody and problem follow ups) will monitor for growth for any components sent to Microbiology and take the appropriate action, as described in the *Procedure* section**.** This technologist will check daily for the culture results and print the final report and attach it to the workup.

D. **Notification of Growth**
If growth is reported by the Microbiology Laboratory, then the Blood Bank medical technologist will immediately notify the patient's nurse and the Transfusion Services Medical Director, as directed in the *Procedure* section.

VI. PROCEDURE:

A. Blood Culture Follow Up Activities

Performed by Lead Technologist, or Technologist assigned to special procedures/antibody and problem follow ups

1. Document that the component bag has been sent to the Microbiology Lab by documenting the computer as "ST" (sent) or "NS" (not sent).
2. Access the microbiology results as follows:
    a. Access BEAKER and go to Specimen Inquiry (By Patient)
    b. Click Non-Human
    c. Enter your sites Medical Record Number(MRN) in the **Submitter** field.
        a. DB MRN is 9999900
        b. FH MRN is 9122368
    d. Click on the Find Source tab
    e. Uncheck the box of relative dates (This will look back 30 days)
    f. A list of cultures will appear, the Patient Name will contain the date the culture was set up.
        i. Date, Unit# (Transfusion Reactions)
    g. Click on the unit you are looking for
    h. Click on the hyper link Specimen number.
        i. If the culture is less than 5 days-Scroll down to Culture, Sterility
        ii. If the culture is ≥ 5 days-go to the Actions Menu icon scroll down until you find Result Entry. Go back to the Actions Menu Icon, find Preview Specimen Report, click Accept. Print the final report (Right Click, Print) and add it to the Transfusion Reaction reports.
3. Note that the donor number, product code, patient's name and MRN must appear on this report. Verify the accuracy of the information and investigate and correct any inaccuracies with Microbiology before proceeding.
4. Observe the results for growth. The Microbiology Laboratory will call the Blood Bank if growth is observed.
    a. The tech will review/printout the culture report everyday until the culture has been finalized.
    b. If **growth is not reported in the computer**, document NG (no growth) for the applicable day on the workup report and add to the Transfusion Reaction report. Document your initials and the current date. Proceed to step 5.
    c. If **growth is reported in the computer**, perform the following:
        i. The Microbiology laboratory will call the Blood Bank and/or Medical Director if growth is observed.
        ii. Document G (growth) for the applicable day on the form. Document your initials and the current date. Add to the transfusion reaction report.
        iii. **Immediately** notify the patient's nurse as follows:
            A. Inform the nurse that "the Microbiology *Lab has reported growth in a blood component that was returned to the Blood Bank as part*

of a suspected transfusion reaction; this may or may not represent a contaminated blood component."

B. Ask the nurse for the name and pager number of the person who he or she would contact if the patient's condition deteriorates; i.e. the patient's physician or resident.

iv. **Immediately** notify the Blood Bank Medical Director or designee, and provide them with the name and pager number of the person that the nurse would contact.

v. Document the nurse's employee number, the name and pager of the nurse's contact person, and the laboratory physician's name on the work up report.

5. Continue these steps daily until either Micro reports out "No Growth at 5 days", or the status of the culture is reported as "complete" in Epic. Only the final report needs to be kept with the Transfusion Reaction workup. **Call the nurse and Medical Director only on the first day that growth is reported.**

VII. REFERENCES:

1. *BaCon Study (Assessment of Blood Component Bacterial Contamination Associated with Transfusion Reaction.)*
2. *American Association of Blood Banks Technical Manual*, current edition
3. American Association of Blood Banks Circular of Information for the use of Human Blood and Blood Components, December 2021.

Approval Signatures

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